

IN THE CLAIMS:

Claim 1 (currently amended) A control system for a hybrid vehicle with a combustion engine for outputting a driving force, an electric motor for generating ~~a force~~ power for assisting the output power from the engine, depending on driving conditions, a power storage unit for storing electric energy generated by the motor acting as a generator using the output power from the engine and electric energy regenerated by the motor when the vehicle decelerates, the control system comprising:

an output assist determination ~~device~~ means for determining, based on a determination threshold value as the standard, whether the power generated by the electric motor is to be used to assist the output power from the engine ~~by the motor~~, depending on the driving conditions of the vehicle;

an air-fuel controller for changing the air-fuel ratio of the mixture, which is to be supplied to the engine, to a condition leaner or richer than the stoichiometric air-fuel ratio; and

a determination threshold value ~~changer~~ changing means for changing the determination threshold value, depending on whether the air-fuel ratio of the mixture is leaner or richer than the stoichiometric air-fuel ratio.

Claim 2 (currently amended) ~~A~~ The control system for a hybrid vehicle according to claim 1, further comprising a determination threshold value change prohibiting ~~device~~ means for prohibiting the operation of the determination threshold value ~~changer~~ changing means when the air-fuel controller changes the air-fuel ratio of the mixture from the condition leaner than the

stoichiometric air-fuel ratio to the condition richer than the stoichiometric air-fuel ratio.

Claim 3 (currently amended) ~~A~~ The control system for a hybrid vehicle according to claim 2, further comprising a terminating ~~device~~ means for terminating the prohibition of the change of the determination threshold value while the determination threshold value change prohibiting ~~device~~ means prohibits the change of the determination threshold value, when the air-fuel ratio controller detects that the air-fuel ratio of the mixture is leaner than the stoichiometric air-fuel ratio, or when the prohibition of the change of the determination threshold value has been maintained for a specified time.

Claim 4 (currently amended) A control system for a hybrid vehicle with a combustion engine for outputting a driving force, an electric motor for generating a ~~force~~ power for assisting the output power from the engine, depending on driving conditions, a power storage unit for storing electric energy generated by the motor acting as a generator using the output power from the engine and electric energy regenerated by the motor when the vehicle decelerates, the control system comprising:

an output assist determination ~~device~~ means for determining, based on a determination threshold value as the standard, whether the power generated by the electric motor is to be used to assist the output power from the engine ~~by the motor~~, depending on the driving condition of the vehicle;

an air-fuel controller for changing the air-fuel ratio of the mixture, which is to be supplied

to the engine, to a condition leaner or richer than the stoichiometric air-fuel ratio;

a determination threshold value ~~changer~~ changing means for changing the determination threshold value, depending on whether the air-fuel ratio of the mixture is leaner or richer than the stoichiometric air-fuel ratio;

an exhaust cleaner having an oxygen concentration measurement device, provided in an exhaust system of the engine, for measuring oxygen concentration in exhaust gas, and a nitrogen oxide reduction device for absorbing nitrogen oxide in the exhaust gas when the oxygen concentration in the exhaust gas is high and for reducing the absorbed nitrogen oxide when the oxygen concentration in the exhaust gas is low;

a reduction ~~device~~ means for setting the air-fuel ratio of the mixture to the condition richer than the stoichiometric air-fuel ratio of the mixture to the condition richer than the stoichiometric air-fuel ratio so as to reduce the oxygen concentration in the exhaust gas, when the air-fuel ratio of the mixture, which is to be supplied to the engine, is leaner than the stoichiometric air-fuel ratio; and

a determination threshold value change prohibiting ~~device~~ means for prohibiting the operation of the determination threshold value ~~changer~~ changing means when the reduction ~~device~~ means changes the air-fuel ratio of the mixture from the condition leaner than the stoichiometric air-fuel ratio to the condition richer than the stoichiometric air-fuel ratio.

Claim 5 (original) A control system for a hybrid vehicle according to claim 4, further comprising:

a vehicle speed measuring device for detecting the speed of the vehicle, wherein
the reduction device sets the air-fuel ratio of the mixture to the condition richer than the stoichiometric air-fuel ratio so as to reduce the oxygen concentration in the exhaust gas at a time interval depending on the vehicle speed detected by the vehicle speed measuring device.

Claim 6 (currently amended) A control system for a hybrid vehicle according to claim 4, further comprising a terminating ~~device~~ means for terminating the prohibition of the change of the determination threshold value while the determination threshold value change prohibiting ~~device~~ means is prohibiting the change of the determination threshold value, when the air-fuel ratio controller detects that the air-fuel ratio of the mixture is leaner than the stoichiometric air-fuel ratio, or when the probation of the change of the determination threshold value is maintained for a specified time.

Claim 7 (currently amended) A control system for a hybrid vehicle according to claim 5, further comprising a terminating ~~device~~ means for terminating the prohibition of the change of the determination threshold value while the determination threshold value change prohibiting ~~device~~ means prohibits the change of the determination threshold value, when the air-fuel ratio controller detects that the air-fuel ratio of the mixture is leaner than the stoichiometric air-fuel ratio, or when the prohibition of the change of the determination threshold value has been maintained for a specified time.

Claim 8 (previously added) A control method for a hybrid vehicle having a combustion engine for outputting a driving force; an electric motor for generating a force for assisting the output from the engine, depending on driving conditions; and a power storage unit for storing electric energy generated by the motor acting as a generator using the output from the engine and electric energy regenerated by the motor when the vehicle decelerates;

the control method comprising the steps of:

determining whether to assist the output from the engine by the motor based on a determination threshold value as the standard, depending on the driving conditions of the vehicle;

changing the air-fuel ratio of the mixture, which is to be supplied to the engine, to a condition leaner or richer than the stoichiometric air-fuel ratio; and

changing the determination threshold value depending on whether the air-fuel ratio of the mixture is leaner or richer than the stoichiometric air-fuel ratio.

Claim 9 (previously added) A control method according to claim 8, further comprising the step of prohibiting the change of the determination threshold value when the air-fuel ratio of the mixture is changed from the condition leaner than the stoichiometric air-fuel ratio to the condition richer than the stoichiometric air-fuel ratio.

Claim 10 (previously added) A control method according to claim 9, further comprising the step of terminating the prohibition of the change of the determination threshold value while the change of the determination threshold value is prohibited, when the air-fuel ratio of the

mixture is determined to be leaner than the stoichiometric air-fuel ratio, or when the prohibition of the change of the determination threshold value has been maintained for a specified time.

Claim 11 (previously added) A control method for a hybrid vehicle having a combustion engine for outputting a driving force; and electric motor for generating a force for assisting the output from the engine, depending on driving conditions; and a power storage unit for storing electric energy generated by the motor acting as a generator using the output from the engine and electric energy regenerated by the motor when the vehicle decelerates;

the control system comprising the steps of:

determining whether to assist the output from the engine by the motor based on a determination threshold value as the standard, depending on the driving condition of the vehicle;

changing the air-fuel ratio of the mixture, which is to be supplied to the engine, to a condition leaner or richer than the stoichiometric air-fuel ratio; and

changing the determination threshold value depending on whether the air-fuel ratio of the mixture is leaner or richer than the stoichiometric air-fuel ratio;

measuring oxygen concentration in exhaust gas;

absorbing nitrogen oxide in the exhaust gas when the oxygen concentration in the exhaust gas is high;

reducing the absorbed nitrogen oxide when the oxygen concentration in the exhaust gas is low;

setting the air-fuel ratio of the mixture to a condition richer than the

stoichiometric air-fuel ratio so as to reduce the oxygen concentration in the exhaust gas, when the air-fuel ratio of the mixture, which is to be supplied to the engine, is leaner than the stoichiometric air-fuel ratio; and

prohibiting the change of the determination threshold value when the air-fuel ratio of the mixture is changed from the condition leaner than the stoichiometric air-fuel ratio to the condition richer than the stoichiometric air-fuel ratio.

Claim 12 (previously added) A control method according to claim 11, further comprising the steps of detecting the speed of the vehicle, and setting the air-fuel ratio so as to reduce the oxygen concentration in the exhaust gas at a time interval depending on the vehicle speed detected.

Claim 13 (previously added) A control method according to claim 11, further comprising the step of terminating the prohibition of the change of the determination threshold value while the change of the determination threshold value is prohibited, when the air-fuel ratio of the mixture is determined to be leaner than the stoichiometric air-fuel ratio, or when the prohibition of the change of the determination threshold value has been maintained for a specified time.

Claim 14 (new) The control system as recited in claim 1,
wherein the determination threshold value is one of a throttle assist trigger threshold

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value and an air intake passage pressure assist trigger threshold value.

Claim 15 (new) The control system as recited in claim 4,
wherein the determination threshold value is one of a throttle assist trigger threshold
value and an air intake passage pressure assist trigger threshold value.